Wildlife Diversity News

A Publication of the Iowa DNR Wildlife Diversity Program

Volume 11, Issue 4

Fall 2012

The Status of Iowa's Amphibians and Reptiles Meeting

On September 22, 2012, a meeting of Iowa herpetologists was held at Mt. Mercy University in Cedar Rapids, Iowa. A total of 29 people attended the meeting representing a wide variety of biologists, from university professors and students to agency personnel and private consultants. Eleven fascinating presentations were given by professionals doing herpetological work in and around Iowa.

Tyler Harms of Iowa State University began the afternoon by presenting a basic overview of the herpetological inventory efforts within the Multiple Species Inventory and Monitoring project. He reviewed techniques and discussed selected species' maps using the latest records from the project.

Timber Rattlesnake. *Photo by Paul Frese*

Greg Schmitt with the Iowa DNR presented information on Timber Rattlesnakes in northeast Iowa. He discussed habitat management work and goat prairie restoration efforts that improved habitat for Timber Rattlesnakes and many other Species of Greatest Conservation Need in the Driftless Area of Iowa.

Brian Edmond with the Missouri Herpetological Association and Missouri Herpetological Atlas Project talked about species' distributions along the Iowa and Missouri border. Brian discussed that although Missouri and Iowa share a political border, there are ecological differences that show up in distributions too.

Dr. James Mahaffy of Dordt College presented data using historical newspaper records to establish historical distributions of rattlesnakes in Iowa. His map showing Massasauga records was especially interesting in that it expands the historical distribution of this species into northern and western Iowa.

Dr. Paul Bartelt of Waldorf College discussed amphibian use of restored wetlands in Winnebago County. His data showed that restored wetlands connected to adequate upland areas provide important habitat for Northern Leopard Frogs, American Toads, and Tiger Salamanders in northern Iowa.

Dr. Neil Bernstein of Mt. Mercy University presented data from his studies of the Ornate Box Turtle in Johnson County. Ornate Box Turtles are highly dependent on sand prairie habitat in Iowa, which is a very rare natural community type. Ornate Box Turtle populations, like many turtles, are limited greatly by nest predators such as Raccoons, Striped Skunks, and Red Foxes. We need more successful Raccoon trappers and hunters!

Jeff Powell and Dr. Harlo Hadow of Coe College discussed data from a long term study of Blue-spotted Salamanders in Linn County. Although a portion of their habitat has been permanently preserved, populations of the salamander are declining for unknown reasons. Jeff and Dr. Hadow reviewed the land use changes from the area and discussed how development and agriculture may be impacting Blue-spotted Salamander populations.

Dr. Jeff Tamplin of the University of Northern Iowa presented habitat, activity, and population data on the Wood Turtle in Iowa. He talked extensively about how Wood Turtles are tied closely to rivers for hibernation, breeding, and nesting. However, they need a variety of habitat types within the riparian zone, including openings with shrubby or forb dominated cover. Like most turtles, successful reproduction is ***(Continued on page 7)***

Inside this issue:

Edited by Natalie Randall

Diversity Dispatch

Breaking News in the Wide World of Wildlife

Black Mamba Venom has Painkilling Properties

Known as one of Africa's deadliest snakes, the Black Mamba's venom contains neurotoxins which paralyze and kill it's prey. So French scientists found it unusual when proteins extracted from Black Mamba venom– named "mambalgins"- demonstrated painkilling properties in experiments on mice. In fact, the mambalgins were found to be as effective as morphine, but without the side effects of morphine (such as headaches and addictiveness). Because mambalgins target a unique pain-blocking pathway in the brain, they may become a new class of analgesics. Scientists are optimistic that mambalgins may be formulated for use in people, too, as both mice and humans react to pain medications similarly. However, researchers caution that mambalgins will have to undergo "significant development" before they are approved for human use.

Bubonic Plague Not Just a Disease of Yester-year

The Bubonic Plague is best known as the disease that caused the deaths of an estimated 25 million people across Europe during the 14th century. The sporadic and rare nature of this disease during the past couple centuries has relegated it as a pathogen of yester-year. However, the Centers for Disease Control estimate that between five and 15 people contract Bubonic Plague each year in the U.S. Last month, a 7 year-old girl in Colorado was diagnosed with the disease, which she had contracted when she came into contact with a dead squirrel. The fleas from such rodents (and sometimes the rodents themselves) can carry and transmit the bacteria that causes Bubonic Plague, either through the flea's bite or from handling an infected rodent. With a prompt and accurate diagnosis, antibiotic treatment can clear the infection, increasing a person's chances of survival markedly. However, prevention is the best medicine: remember that wildlife can carry many diseases that affect people, so enjoy wildlife viewing at a safe distance and avoid contacting or handling dead animals.


Mountain Lion.
Photo by Cedward Brice

Study Reveals Benefits of Older Toms in Mountain Lion Populations

The results of a 13-year Washington State University study have revealed that increasing the harvest of Mountain Lions does not equate to less livestock losses or conflicts with humans. Instead, the *demographic* of an area's Mountain Lion population appears to be the key, where older male (tom) lions create more stability both within their own populations and for other wildlife species and livestock. Evidence from the research suggests that older toms hold permanent territories in which they keep out younger male Mountain Lions. These juvenile Mountain Lions are like teenagers, in that they are less cautious and more troublesome. Since removing a mature tom from his territory may allow several young males to come into the area, instances of livestock depredation and human encounters increase. Additionally, female lions will take their litters and move out of these areas into higher elevations to avoid encounters with the juvenile males (who may otherwise kill her young to induce estrus). These higher elevations harbor less abundant prey species, such as Bighorn Sheep and Woodland Caribou, whose populations then suffer from increased predation by the displaced females and their young. The Washington Department of Fish and Wildlife is now incorporating these findings into their Mountain Lion management decisions.


Iowa Envirothon champions!

Photo by Pat Schlarbaum

2012 High School Envirothon Competition

The Iowa Envirothon is a state-wide program developed in conjunction with the National Envirothon policies. The competition provides an incentive for high school students to integrate and apply knowledge and skills learned in biology, chemistry, earth science, botany, zoology and other science disciplines while stimulating, reinforcing, and enhancing students' interest in the environment, related careers, and natural resources.

During envirothon competitions, teams rotate through time-limited test stations that utilize a problem solving approach as well as testing general knowledge and identification abilities. Environmental issues are interwoven into all topics. At each station, the team works as a group and only one answer sheet is completed. As each group completes a station, their answers are taken to the official scorekeepers. Additionally, an oral presentation dealing with a current environmental issue must be given. Questions get more involved and challenging at the state and national levels.

In recent years, as many as 60 Iowa teams compete at Regional competitions around the state. From those, the top 15 teams are invited to Springbrook Conservation Education Center each April to engage in state-wide competition. The top team in the state then goes on to represent Iowa at the

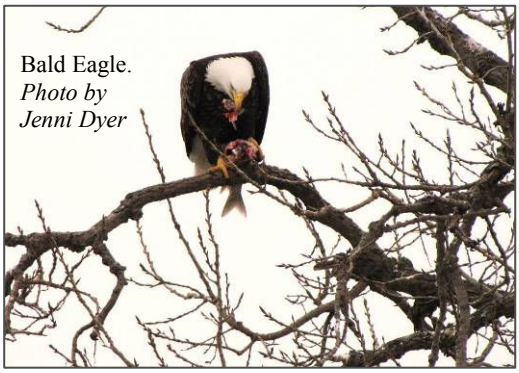
(Continued on page 4)

State Wildlife Grant Spotlight: Research on Lead Exposure in Bald Eagles

State Wildlife Grants (SWG) is a federal allocation of funding awarded to each state to be used expressly for conservation of Species of Greatest Conservation Need (SGCN). In Iowa, the DNR's Wildlife Diversity Program spends this money on research, land protection, and land management for SGCN. This section will highlight some of the projects that have been made possible by State Wildlife Grant money.

One of the current SWG funded research projects, being conducted by Iowa State University, is focused on evaluating the prevalence of lead exposure in free-flying Bald Eagles (*Halieetus leucocephalus*). Previous research has documented that Bald Eagles are being exposed to lead and, in some cases, suffering illness and death. However, it is not clear how widespread exposure rates may be in the wild eagle population. This is the primary question being asked in this study and the answer is being investigated in a rather unique way.

The challenge of collecting information on lead exposure in eagles is that collecting a blood sample requires having the bird in hand, but trapping Bald Eagles is difficult and can be traumatic for the bird. So for this project, researchers decided to give another bodily product a try – poop – or "mutes" as eagle feces are more properly called. Graduate student Billy Reiter-Marolf (yes, a former BBA coordinator!) and his field assistant spent the winter and spring of 2012 traveling around to a few winter roost sites and 110 nest sites to collect mute samples. The mutes are then tested for the presence of lead.


Bald Eagle. *Photo by Jenni Dyer*

In addition to the primary objective, the researchers are asking a number of other questions as well. Is exposure to lead different depending on where the eagle's nest is located (e.g., on the Mississippi River in the USFWS Refuge vs. the rest of the state) or does time of year make a difference (winter vs. spring)? This project also depends heavily on partnerships. Wildlife rehabilitators in the state have partnered with ISU researchers to evaluate the relationship between lead in the blood versus lead detected in the mutes, as well as to determine how the incidence of lead exposure in eagles brought to rehabilitators reflects what is happening in the overall eagle population. The Diversity Program's Volunteer Wildlife Monitors have also stepped in to help assess what effect data collection activity under nest sites might have on the eagle's nest success. The U.S. Fish and Wildlife Service has also been extremely helpful by transporting researchers to remote nesting sites on the Upper Mississippi National Fish and Wildlife Refuge.

There is one more year of data collection to go before the results will be ready, but the findings should be an extremely useful tool in helping with management of the Bald Eagle population.

—Stephanie Shepherd
Surveys & Data Coordinator

For more about lead in wildlife, visit: www.iowadnr.gov/Hunting/HunterSafetyEducation/GettheLeadOut.aspx

News From the Frog Pond

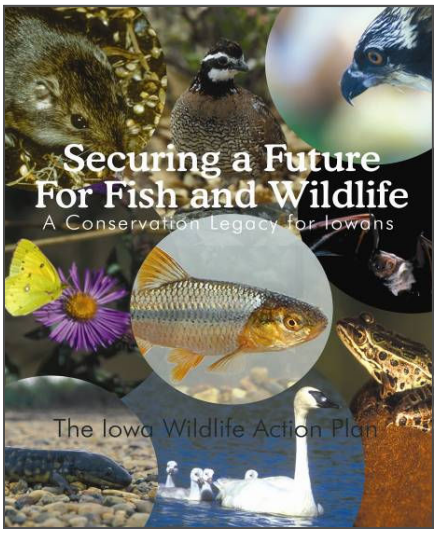

Photo by Josh Otten

As most of you are aware, Iowa's Wildlife Action Plan was approved by Congress (well, by the U.S. Fish and Wildlife Service on behalf of Congress) in 2006. The Plan had been drafted by a large committee of people representing county, state, and federal agencies, non-governmental organizations, private business, and universities in the early 2000's. Congress had defined eight required elements, one of which was a timeline for review and revising the Plan. Our revised Plan is scheduled to be submitted for approval following our review and revision in 2015.

The Plan outlines six Visions for Iowa's future:

1. By 2030, Iowa will have viable wildlife populations that are compatible with modern landscapes and human social tolerance.
2. By 2030, Iowa will have healthy ecosystems that incorporate diverse, native habitats capable of sustaining viable wildlife populations.
3. Diverse wildlife communities will be developed on public and private lands and waters through the use of adaptive ecological management principles.
4. More Iowans will participate in wildlife-associated recreation, and all Iowans will have access to publicly owned recreation areas to enjoy wildlife in its many forms.
5. Iowans will respect wildlife for its many values and they will advocate effectively for conservation of wildlife and wildlife habitats.
6. Stable, permanent funding will be dedicated to the management of wildlife at a level adequate to achieve the visions of the plan.

As you can see, this Plan is for every citizen of Iowa who enjoys being outdoors experiencing nature. Some of the visions will perhaps be more difficult to achieve than others, but we are working toward all of them. Every month we get just a little closer. For the revision, we anticipate reconsidering species currently listed as those of Greatest Conservation Need, habitats and the stresses they are experiencing, as well as including a few more achievable actions and the metrics we will need in order to show progress toward our goals.



If you have an interest and an expertise to assist, please join us! We have committees examining each of the nine taxa (birds, fish, mammals, amphibians, reptiles, odonates, butterflies, terrestrial snails, and mussels), as well as examining habitats, habitat management, education, and recreation. This is a huge undertaking and we are starting the process now. The revision can be overwhelming when considered in its entirety, but certainly achievable in smaller steps! You can learn more about the Wildlife Action Plans from a national perspective at www.wildlifeactionplan.org/ and about Iowa's Plan in particular at www.iowadnr.gov/Environment/WildlifeStewardship/IowaWildlifeActionPlan.aspx .

— Karen Kinkead
Wildlife Diversity Program Coordinator

Envirothon (continued)

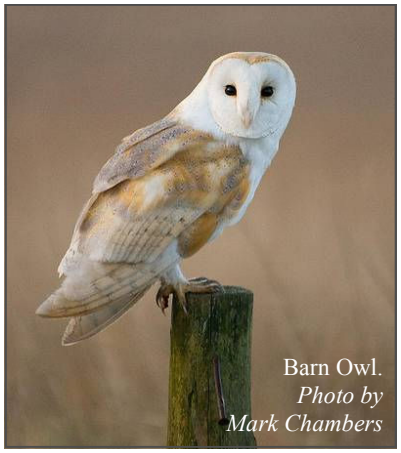
national Canon Envirothon. The Canon Envirothon is North America's largest high school environmental competition. During the recent 2012 competition, teams representing 45 states and nine Canadian provinces competed for $75,000 in scholarships and prizes.

This year, Iowa's winning team was the "Whooping Cranes" of Marshalltown High School. The team included Molly Finn, Brennan Goodman, Joe Metzger, Abby Snyder, and Adam Willman (see team photo on page 3). Coach Susan Fritzell and the team travelled to the Canon Environthon competition at Susquehanna University in Selinsgrove, Pennsylvania in July. The team finished 17th overall and had the best score for an Iowa team in the history of participation with the Envirothon. According to Coach Fritzell, the team really shone on the orals competition with their 6th place finish. Within the other categories, the Iowa team consistently scored in the top fiftieth percentile: Aquatics -16th, Forestry-22nd, Soils-25th, Wildlife-22nd, and Current Issues-18th. "We are also proud that we placed just two places and two points behind the Pennsylvania team, which certainly had a home-state advantage," said Fritzell. "The students not only learned a lot during our week in Pennsylvania, but really enjoyed getting to know students from across North America (their new best friends are from California and Tennessee) and experiencing the mountains, rivers, and waterfalls of that part of the country."

For more information about Iowa's Envirothon, contact Envirothon coordinator Rebecca Kauten at rkauten@cfu.net or (515) 758-3880. Good luck to all Envirothon Teams in 2013!

—Pat Schlarbaum
Wildlife Diversity Technician II

Iowa Barn Owl Status Report



Barn Owl.
Photo by Mark Chambers

While the Barn Owl is still an Iowa Endangered species, it seems its status is much more secure now than it was 30 years ago. In the early 1980s, there was perhaps one wild Barn Owl nest documented every five years. During the last eight years, an average of five confirmed nests has been documented each year. So – while nest attempts seem to have dropped a bit from the average, with just three nests confirmed in 2012, it still appears that Iowa Barn Owls are holding their own. Because about 90% of this owl's diet is comprised of Meadow Voles, and since Meadow Vole populations typically take a nose dive during drought conditions, it was no surprise to see fewer Barn Owl nests reported this year.

With 98% of Iowa's land in private ownership, the future of the Barn Owl is tied very closely to private landowner stewardship. It has been my experience that most people who discover Barn Owls nesting on their properties are excited to have them and typically are willing to do more to encourage the owls to stick around. Putting up nest boxes for this species is becoming more commonplace, and one or more nests are reported in nest boxes during most years. The three Barn Owl nests confirmed this year were in outbuildings and a grain bin on private land; one nest each in Ida, Carroll, and Washington counties. At least nine young fledged from these three sites. There were also Barn Owls on territories at three different nest boxes, one each in Tama, Taylor, and Decatur counties. It is possible that nest attempts occurred at two of these sites. Another potential nest site was in Clive in Dallas County, where a Barn Owl was heard vocalizing most nights for about four weeks this summer. The only other report received was of a Barn Owl in Winnebago County that was killed when struck by an automobile.

Our thanks to the growing number of people who value the Barn Owl and who encourage its presence on their properties. If you wish to report a Barn Owl sighting or would like information on how to put in place your own Barn Owl nest box, please contact me by phone (515-432-2823 ext. 106) or email (bruce.ehresman@dnr.iowa.gov).

—Bruce Ehresman
Wildlife Diversity Avian Ecologist

Iowa Whitetails: Fall Life (Part 2)

Autumn is a time of change and preparation for Iowa's whitetails. In late August, deer begin molting from their summer "red" coats to winter coats. The winter pelt is much warmer and takes several weeks to grow in. Bucks are also beginning to shed the velvet from their antlers at this time.

Feeding to gain weight becomes an important activity during the fall months as the deer take advantage of nutritious mast crops and waste grain to build fat reserves for the winter.

Bachelor groups of bucks break up as the males become more aggressive towards each other with the approach of the November breeding season. The bucks will rub their antlers on saplings, which not only strengthens muscles for fighting, but also creates visual and olfactory signposts advertising the animal's presence. "Scrapes" are pawed into the ground which also serve as communication signposts for the local deer herd.

White-tailed Deer.
Photo by Tom Litchfield

With the decline in Iowa's deer herd, the rate of vehicle/deer collisions has also been declining. The deer road-kill rates for the last four years compare well with those that existed from 1985-1995.

At the height of the breeding season, bucks temporarily forsake much of their feeding activities while searching for receptive does. White-tailed deer utilize a "chase strategy" for breeding, where the bucks actively pursue does as they near breeding readiness. This creates sharp increases in deer movement.

These behavioral changes, along with the crop harvest creating shifts in habitat use, are what cause November to typically be the highest vehicle/deer collision month in Iowa (accounting for 20% of the total incidents annually).

— Tom Litchfield
State Deer Biologist

To Feed or Not to Feed Hummingbirds in the Fall?

Back in early September, I received a question from a gentleman concerned about the Ruby-throated Hummingbirds he still had coming to his feeders in southeast Iowa. He was told by a friend that he should stop feeding the hummingbirds after September 15th because, if there is a readily available food source, those birds won't migrate and will stay in Iowa for the winter. In this article, I will provide a bit of information about migration and the biology of the Ruby-throated Hummingbird and explain why one can still feed these little critters throughout the fall.

Weighing about 3.5 grams and standing 75-90 millimeters tall, the Ruby-throated Hummingbird is one of the smallest birds in North America and is the only species of hummingbird found commonly throughout Iowa. These birds arrive in Iowa in early May to breed and depart for their wintering grounds in mid- to late-September. Despite its small size, the Ruby-throated Hummingbird flies from its breeding grounds, which can stretch as far north as central Alberta, to its wintering grounds in southern Mexico and Central America, a trip of approximately 5,500 kilometers.


Ruby-throated Hummingbird male.
Photo by Curt Hart

I often hear, as with the gentleman mentioned above, that people are hesitant to feed hummingbirds after mid-September because of fear that the hummingbirds will not migrate to their wintering grounds and, consequently, not survive the Iowa winter. Keeping feeders up throughout the fall is not necessarily a "death sentence" for those birds that use them. Ruby-throated Hummingbirds, like most other migratory birds, utilize cues, or signals, to determine when they need to migrate. There are two different types of cues; ultimate cues are those that are "hard-wired" into a bird and change very little from year to year, and proximate cues are typically environmental, such as changes in weather or the lack of a food source. Although birds use both types of cues to determine when they should begin migrating, they typically rely more heavily on the ultimate cues when making the final decision, while the proximate cues simply add evidence to confirm their decision. For example, nearly all birds have what is called a circannual rhythm that regulates major events that occur throughout the year, such as spring and fall molts, migration, and breeding. Think of the circannual rhythm as an "inner clock". When it is time to migrate, a hummingbird's inner clock is telling it that it's time to go, and that bird is likely going to listen to this inner clock. However, it may also use information from the environment to aid in its decision, such as cooler temperatures in the fall or even photoperiod (the length of daylight). Ultimately, there comes a point when the hummingbird's inner clock becomes overbearing and causes them to migrate regardless of other proximate cues. Therefore, a steady food source in the fall is not likely to keep those birds around, especially when they have an inner clock nagging at them to get moving.


Ruby-throated Hummingbird female.
Photo by Tyler Harms

One other thing to keep in mind is that nectar is not the primary food source of Ruby-throated Hummingbirds in the fall. These birds are feeding primarily on small insects while using the nectar as a supplement. As a friend of mine once said, the nectar is like a hummingbird's morning cup of coffee. Although they utilize this food source for quick energy, they feed on insects for sustenance.

So, truth be told, feeding hummingbirds in the fall does not keep them from migrating to the wintering grounds. There is a slight possibility that an individual hummingbird will stay longer than it should, and that bird may or may not survive the Iowa winter. This happens often when looking at all migratory birds. However, those migrating hummingbirds will appreciate the "shot of caffeine" you have out for them on the trip through your yard.

—Tyler Harms
MSIM Biologist

Harvester. *Photo by Shane Patterson*

Species Spotlight: Harvester (*Feniseca tarquinius*)

Many of us are familiar with the close association between butterflies and their favorite plants. Early on in school, we learned that, in addition to sipping nectar from flowers, female butterflies utilize certain species for ovipositing (i.e., laying of eggs). Perhaps the most famous example of this is the Monarch's dependence on milkweed. Wherever the Monarch is found in Iowa and beyond, females seek out milkweeds, which subsequently serve as food for the Monarch's developing larvae. For sure, a boldly striped Monarch caterpillar - clinging conspicuously to a sunlit milkweed - represents one of the most prominent images of insects in North America.

In recent years, much attention has been given to the Regal Fritillary, a native-prairie denizen that nearly vanished from much of its range. With restoration efforts, this showy pollinator has made an impressive comeback in prairies containing its primary hosts, Bird's-foot Violet and Prairie Violet. Population changes in various other butterflies have also been related to the rise or fall of proper host-plant habitat. And, in general, finding butterflies is often a matter of searching for their preferred plants in the appropriate season and habitat.

Widely distributed but largely uncommon, the small, strikingly patterned Harvester butterfly is likewise tied to sites with certain types of plants, including greenbriers (*Smilax sp.*), ash trees (*Fraxinus sp.*), alders (*Alnus sp.*), witch-hazels (*Hamamelis sp.*), and Silver Maple (*Acer saccharinum*). But here's the catch: unlike its relatives, the Harvester's caterpillars do not actually eat the plants that they inhabit. Instead, they prey upon Woolly Aphids, which are tiny insects that extract fluids from the stems and leaves. Treehoppers and scale insects similarly provide another food source for the caterpillars. By way of this anomaly, the Harvester holds the distinction of being North America's only carnivorous butterfly caterpillar! Adult Harvesters, in turn, feed on the sugar-rich "honeydew" produced by these aphids, in addition to obtaining nutrients from mud and dung.

Here in Iowa, like elsewhere, the Harvester is most prevalent in forested areas, primarily where streamsides hold the requisite plant species and insect prey. On a humid afternoon in July, I wandered through Brush Creek Canyon and observed seven adult Harvesters basking and feeding by the lush, rocky edges of the namesake creek. Although I've personally found them most readily at comparable locations within and along the Driftless Area, Harvesters have been detected in suitable habitat in all but the far northwest part of the state. So whether you're sampling plants, watching wildlife, or just having a relaxing spring/summer walk through the woods, be on the lookout for this unique representative of Iowa's invertebrate community!

—Shane Patterson
Iowa Breeding Bird Atlas Coordinator

Iowa's Amphibians and Reptiles (continued)

greatly limited by nest predation and sometimes by flooding.

Terry VanDeWalle of Stantec discussed his twelve years of studies regarding the Massasauga in Bremer County. Massasaugas are reliant on wet prairies and marshes for much of their life history needs. They use crawfish burrows for hibernation and feed on grassland rodents such as Meadow Voles. Iowa's Massasauga populations seem to be barely hanging on.

Josh Otten and Terry VanDewalle of Stantec talked about their observations of Blanding's Turtles aestivating on land, which is an unusual behavior in turtles. Even in these modern times we know very little about many species' life histories!

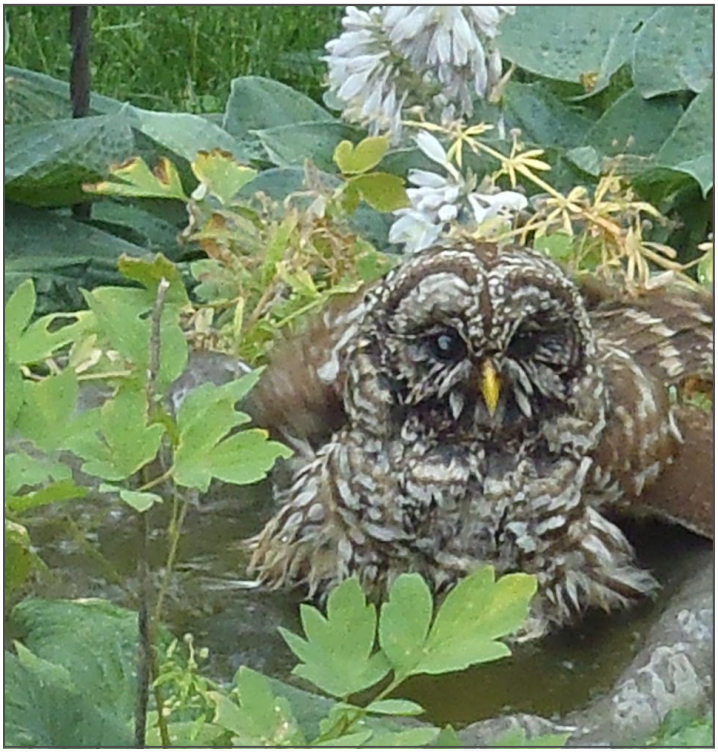
Finally, I discussed what we know about the Timber Rattlesnake in Iowa, which is really very little. We have limited information about the status and distribution of the snake in our state. Therefore photographic records and observations would be valuable in delineating their distribution. In Iowa, Timber Rattlesnakes are closely tied to limestone ledges for suitable hibernacula. Recent radio-telemetry research suggests they use more open habitats than the typical closed canopy Iowa woodland. Significant potential for woodland habitat management exists in Iowa, which would improve conditions for a variety of species that use these areas.

Blue-spotted Salamander. *Photo by Greg Schechter*

Discussion was held following the presentations to talk about what can be done to improve our knowledge of amphibians and reptiles in Iowa. Many good ideas were suggested and the discussion continued to a local barbeque joint. The consensus of the group was that the meeting was a success and should be repeated in the future.

—Paul Frese
Wildlife Diversity Technician II

Last Look



Jim Urban, one of our Volunteer Wildlife Monitors, sent us this photo of a Barred Owl using his bird bath for — what else?— bathing!

Events Calendar

Christmas Bird Count
Dec. 14-Jan. 5
Counties across Iowa
For more information, visit www.iowabirds.org/Events/Calendar.aspx

2013 Bald Eagle Appreciation Day Events
Jan. 5: 8:30AM-3:30PM @ Lock & Dam 13, 8AM-2PM @ Clinton Community College Clinton, IA

Jan. 11-13: Fri. 4PM-8PM, Sat. 10AM-8PM, Sun. 10AM-5PM
QCCA Expo Center
Rock Island, IL

Jan. 12-Feb. 10 (weekends)
Sat. 9AM-10:30AM, Sun. 2:30PM-4PM
Mississippi River Visitor Center
Reservations required (309) 794-5338

Jan. 19: 9AM—4PM
Lock and Dam 11 & Grand River Center
Dubuque, IA

Jan. 19-20: Sat. 9AM—3PM, Sun. 10AM—3PM
River City Mall & River Front
Keokuk, IA

Jan. 25-26: 10AM—2PM
Howell Station and Pella Central College
Pella, IA

Jan. 26: 9AM—3PM
Pearl City Station, Lock and Dam 16, and Muscatine Boat Club
Muscatine, IA

Jan. 26: 9AM—4PM
Lock and Dam 21
Quincy, IA

For more information on Bald Eagle Appreciation Day events, visit www.missriver.org.

A Publication of the:

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